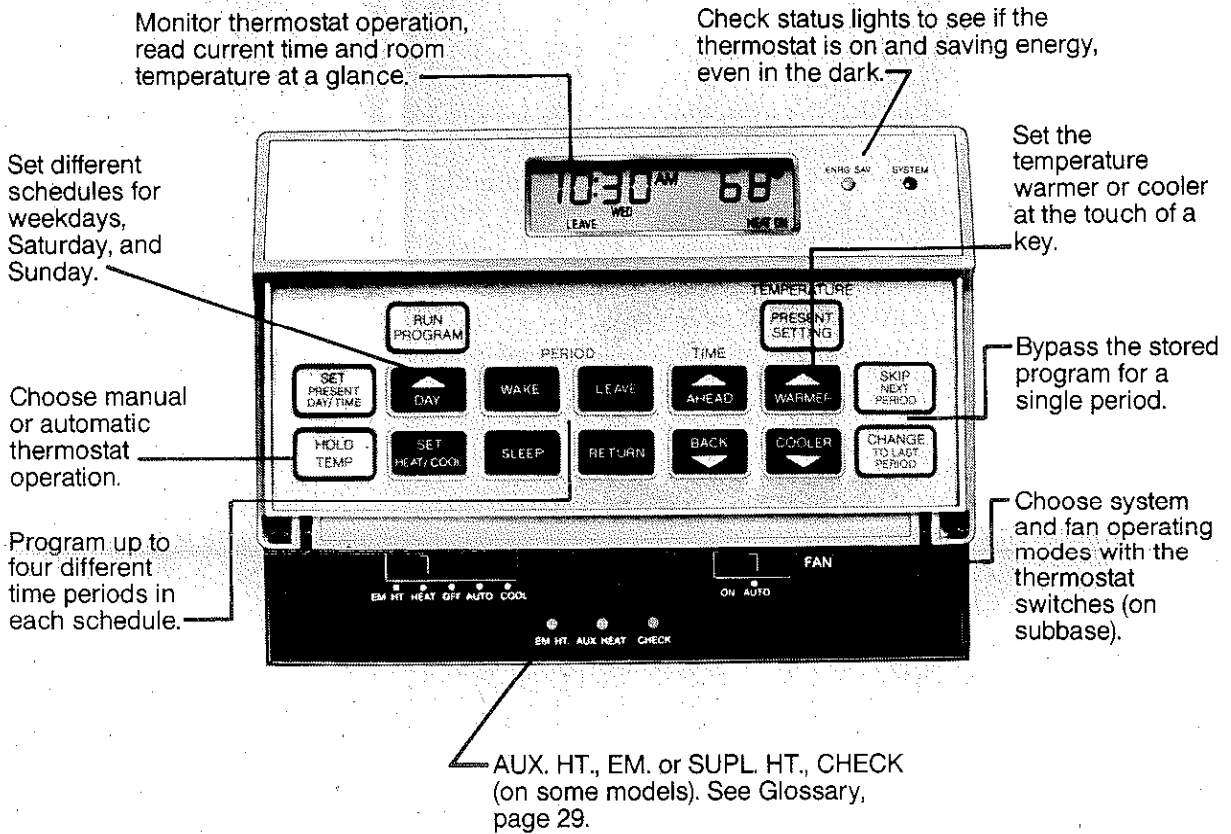

Programmable Heat Pump Thermostat

OWNER'S GUIDE

Your new programmable heat pump thermostat is a precision instrument that's quality-built to give you many years of satisfactory service. It's a "smart" thermostat that lets you save energy while still maintaining the standard of comfort you want in your home.

This Owner's Guide will show you how to get the most benefit from your new thermostat.

Features



Simple Four-Step Programming

Of course, you can use the schedule preprogrammed into your new thermostat (see Glossary, page 29). But it's an easy matter to program the thermostat to fit your lifestyle.

- 1 Set the current time and day. See page 1.
- 2 Set the program schedule and heating temperatures. See page 2.
- 3 Set the cooling temperatures. See page 9.
- 4 Set the system and fan switches. See page 15.

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PROGRAMMING YOUR THERMOSTAT

STEP 1 SET THE CURRENT DAY AND TIME

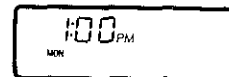
You can program this thermostat either on the wall or in your hand. SEE PAGE 25 TO FIND OUT HOW TO REMOVE THE THERMOSTAT FROM THE WALL.

Always press the keys with your fingertip or similar blunt tool. Sharp instruments like a pen or pencil point can damage the keyboard.

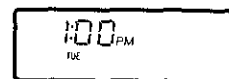
NOTE: Check the glossary, page 29, for definitions of unfamiliar words.



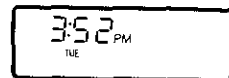
Press and release. The display shows 1:00 PM Mon.



Press and hold until the current day appears in the display.



Press and hold until the current time appears in the display. Be sure AM or PM appears as desired.



You have programmed the current day and time. Go on to Step 2.

STEP 2 SET THE PROGRAM SCHEDULE AND HEATING TEMPERATURES

Before You Begin...

The schedule form on page 31 provides an opportunity to plan your schedule.

Now...

Start by programming the WAKE time and temperature for weekdays.

The thermostat requires a program for WAKE. You can program LEAVE, RETURN and SLEEP or not, as you please.



Press and release. Note that the display shows WAKE and the preprogrammed time and temperature.



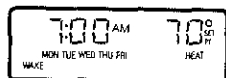
If the display reads COOL, press and release to switch to HEAT.



If display reads SAT or SUN, press and hold until MON TUE WED THU FRI appears.



Press and hold until the display shows the desired starting time.



PROGRAMMING YOUR THERMOSTAT



Press and hold until the display shows the desired temperature.



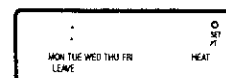
If the display starts to blink while you are holding down TEMPERATURE WARMER or COOLER, you have reached the setting limit. If your thermostat can switch automatically between heating and cooling, the heating temperature must be at least 3 degrees below the air conditioning temperature. For example, if the cooling setting is 75° F, the maximum heating setting is 72° F.

3

Program the LEAVE time and temperature, if desired.



Press and release. The display shows LEAVE, but no time or temperature.



NOTE: You can cancel the LEAVE, RETURN or SLEEP program by holding down the period key until the time and temperature disappear from the display.



Press and hold until the display shows the desired starting time.



Press and hold until the display shows the desired temperature.



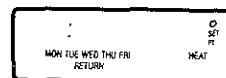
4

PROGRAMMING YOUR THERMOSTAT

Program the RETURN time and temperature, if desired.

RETURN

Press and release. The display shows RETURN, but no time or temperature.



AHEAD

Press and hold until the display shows the desired starting time.



BACK

WARMER

Press and hold until the display shows the desired temperature.



COOLER

5

Program the SLEEP time and temperature, if desired.

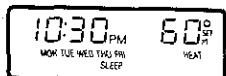
SLEEP

Press and release. The display shows SLEEP and the preprogrammed time and temperature.



AHEAD

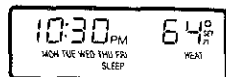
Press and hold until the display shows the desired starting time.



BACK

WARMER

Press and hold until the display shows the desired temperature.



COOLER

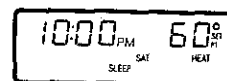
6

PROGRAMMING YOUR THERMOSTAT

Set the SATURDAY schedule. Use the same procedure as for weekdays.



Press and release until SAT appears on the display.



Press WAKE, LEAVE, RETURN or SLEEP to select the time period.



Use the AHEAD/BACK keys to set the time and the WARMER/COOLER keys to set the temperature.

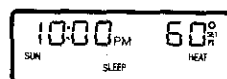


7

Set the SUNDAY schedule. Use the same procedure as for weekdays.



Press and hold until SUN appears on the display.



Press WAKE, LEAVE, RETURN or SLEEP to select the time period.



Use the AHEAD/BACK keys to set the time and the WARMER/COOLER keys to set the temperature.



You have completed setting the program schedule and heating temperatures. To set air conditioning, go to Step 3.

If you do not want to program cool temperature skip Step 3 and press RUN PROGRAM key.

8

PROGRAMMING YOUR THERMOSTAT

STEP 3 SET THE COOLING TEMPERATURES

The program times are the same for both heating and cooling. Only the cooling temperatures need to be programmed if you have already programmed for heating. To set times as you program the cooling temperatures, use the TIME AHEAD and BACK keys as described in Step 2. But if you change times for cooling, you are also changing them for heating!

First program the WAKE temperature for weekdays.

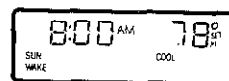
WAKE

Press and release. The display shows WAKE and the time and temperature you programmed for heating.



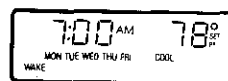
SET
HEAT / COOL

Press and release so COOL shows on the display, along with the preprogrammed cooling temperature.



DAY

If display reads SAT or SUN, press and hold until MON TUE WED THU FRI appears.



9

WARMER

COOLER

Press and hold until the display shows the desired temperature.



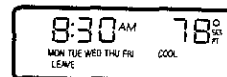
If the display blinks while you hold down TEMPERATURE WARMER or COOLER, you have reached the setting limit. If your thermostat can switch automatically between heating and cooling, the cooling temperature must be at least 3 degrees higher than the corresponding heating temperature. For example, if the heating setting is 70° F, the minimum cooling setting is 73° F. If you desire a lower cooling temperature, the heating temperature must first be lowered accordingly.

PROGRAMMING YOUR THERMOSTAT

Program the LEAVE temperature, if desired.

LEAVE

Press and release. The display shows LEAVE, the time programmed for heating, and 78° F.



WARMER

Press and hold until the display shows the desired temperature.



COOLER

Program the RETURN temperature, if desired.

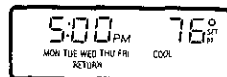
RETURN

Press and release. The display shows RETURN, the time programmed for heating, and 78° F.



WARMER

Press and hold until the display shows the desired temperature.



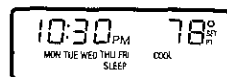
COOLER

11

Program the SLEEP temperature, if desired.

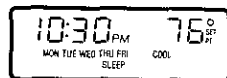
SLEEP

Press and release.



WARMER

Press and hold until the display shows the desired temperature.

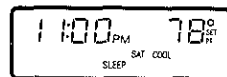


COOLER

Set the cooling temperatures for the SATURDAY schedule. Use the same procedure as for weekdays.

DAY

Press and hold until SAT appears on the display.



WAKE

Press WAKE, LEAVE, RETURN or SLEEP to select the time period.

LEAVE

SLEEP

RETURN

12

PROGRAMMING YOUR THERMOSTAT



Use the WARMER/COOLER keys to set the temperature.

Set the cooling temperatures for the SUNDAY schedule. Use the same procedure as for weekdays.



Press and hold until SUN appears on the display.



Press WAKE, LEAVE, RETURN or SLEEP to select the time period.



13



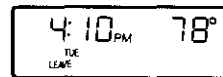
Use the WARMER/COOLER keys to set the temperature.

You have completed programming the cooling temperatures.



Press and release to start the program.

Go to Step 4.



14

PROGRAMMING YOUR THERMOSTAT

STEP 4 SET THE SYSTEM AND FAN SWITCHES ON THE SUBBASE.

Depending on thermostat model, some of the switch positions shown may not be available to you. Note the positions provided on your subbase, then set the switch(es) as desired.

First set the fan switch.

Then set the system switch.

FAN ON: The fan runs continuously. Use for improved air circulation during special occasions or for more efficient electronic air cleaning.



FAN AUTO: Normal setting for most homes and businesses. The fan starts and stops with the compressor in heat pump systems when the system switch is set to HEAT, AUTO or COOL. When system switch is set to EM. HT., the fan operates with the auxiliary heat (on some models).

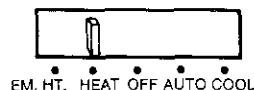


EM. HT. or SUPL. HT.: The thermostat controls only the backup or supplemental heat. The heat pump is off.

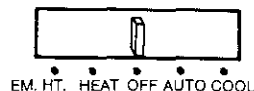


15

HEAT: The thermostat controls your heating system.



OFF: Both the heating and cooling systems are off.



AUTO (select models only): The thermostat controls either your heating or cooling system, depending on room temperature.



COOL: The thermostat controls your cooling system.



Now, while you enjoy precision temperature control, read on to learn about the operating flexibility that makes this thermostat THE SMART CHOICE.

You have finished programming your thermostat.

If you removed it from the wall to program, replace it following the procedure on page 26.

16

OPERATING YOUR THERMOSTAT

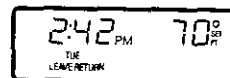
TEMPORARILY CHANGING THE PROGRAM

These features let you custom-tailor the program for those times when someone comes home early, or you're staying up late, or you plan to be out for the evening.

To keep the current temperature through the next program period:



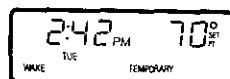
Press and release. The name of the period to be skipped will flash in the display until the next regularly scheduled period starts.



To go back to the temperature of the previous program period:



Press and release. The display will show the name of the previous period and flash "temporary" until the next regularly scheduled period starts.



17

To temporarily raise or lower the temperature for the current period only:



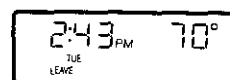
Press and hold until the desired temperature is reached. The display will flash "temporary" until the next programmed time period starts.



If you change your mind:



Press and release to cancel any of the temporary settings.



OPERATING YOUR THERMOSTAT

PERMANENTLY CHANGING THE PROGRAM

If your schedule changes or you want a different temperature, you can update any setting without affecting the rest of the program.



Press and release the desired period key.



Press and hold until the desired day schedule shows on the display.



Press and hold the Time or Temperature keys until the display shows the desired new program.



Press and release to return to normal operation.

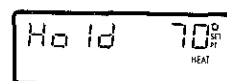
19

OPERATING THE THERMOSTAT MANUALLY

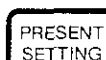
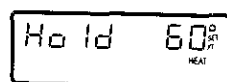
This feature is particularly useful when you go on vacation or other extended absences. It does not cancel your program.



Press and release.



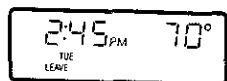
Press and hold to change the temperature setting. After a few seconds the display will show the current temperature.



Press and release to check the temperature setting.



Press and release to cancel hold.



NOTE: Moving the system switch also cancels hold.

20

OPERATING YOUR THERMOSTAT

CANCELING PROGRAM SETTINGS

The thermostat requires time and temperature settings in the WAKE period, but any of the others can be canceled. Weekday, Saturday and Sunday settings are canceled separately.

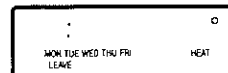
SLEEP

LEAVE

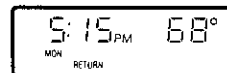
RETURN

RUN
PROGRAM

Press and hold the desired period key until the time and temperature clear from the display (about 3 seconds).



Press and release to return to normal operation.



21

CHECKING THE PROGRAM TIMES AND TEMPERATURES

You can check all the stored settings without affecting the permanent program.

WAKE

SLEEP

LEAVE

RETURN

Press and release the desired period key. The start time and temperature setting will appear on the display.



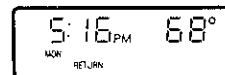
DAY

Press and release to display the next daily time and temperature for that period.



RUN
PROGRAM

Press and release to return to normal operation.



22

OPERATING YOUR THERMOSTAT

CHECKING THE CURRENT TEMPERATURE SETTING

Press a single key to compare current room temperature to the setting at any time.

PRESENT
SETTING

Press and release. The display will show the current temperature setting for several seconds, then revert to the room temperature.

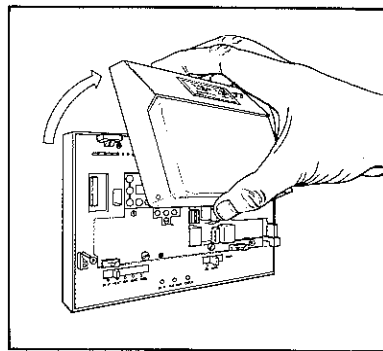
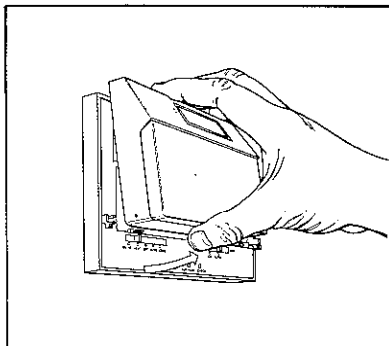
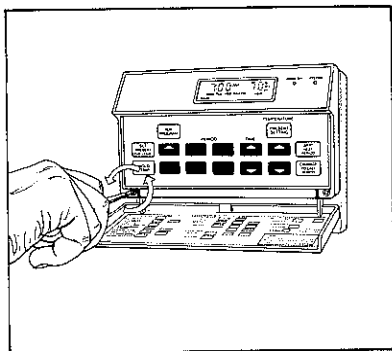
During recovery from energy savings, the setting displayed will not match the programmed setting. This is because the thermostat gradually changes the temperature setting during recovery to provide most efficient use of the heating or cooling equipment.



MAINTAINING YOUR THERMOSTAT

REMOVING THE THERMOSTAT

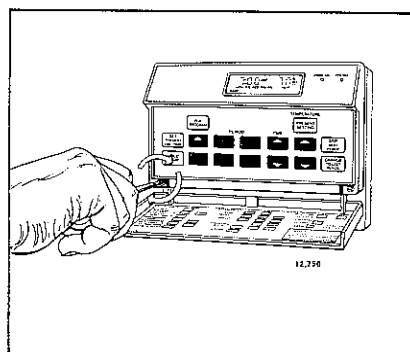
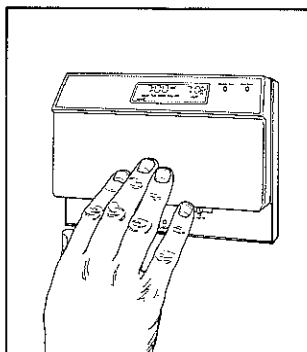
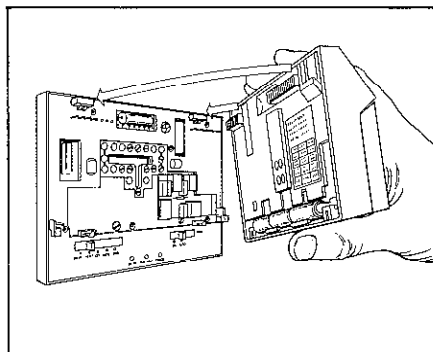
- 1 Loosen the two captive screws at the bottom corners of the case.
- 2 Pull the thermostat out from the bottom.
- 3 Lift the thermostat up and off the subbase.



25

REPLACING THE THERMOSTAT

- 1 Hang the thermostat on the tabs at the top of the subbase.
- 2 Swing down and press on lower edge until thermostat snaps in place.
- 3 Tighten the captive screws.



MAINTAINING YOUR THERMOSTAT

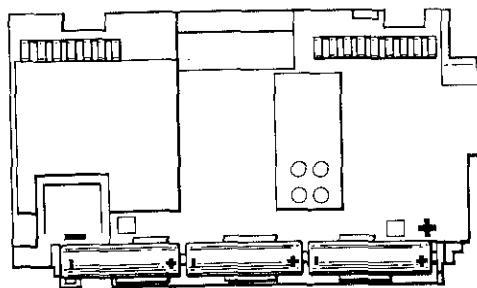
REMOVING BATTERIES

1 Look at the display. When the batteries are low, the display will flash. If the display is flashing, you will have to reprogram the thermostat if you insert the new batteries within 20-30 seconds of taking out the old ones.

To replace:

- Set the system switch to OFF.
- Remove the thermostat from the wall. See page 25.
- Lift the batteries out of the holder.

- Insert the new batteries, making sure the positive (+) terminals all face toward the right.
- Replace the thermostat on the wall. See page 26.
- Reprogram, if necessary.



12,751

27

POWER OUTAGES

Backup batteries will hold the programming and keep the display on during most power outages. Once the power is restored, the system will resume normal operation.

If the display goes off when power is lost, either the backup batteries need to be replaced or are not installed. When power is restored, the display will flash 1:00 PM to remind you to reprogram.

GLOSSARY

Comfort temperature

The temperature you want in the morning and evening when you're home.

Energy-saving temperature

The lower (heating) or higher (cooling) temperature that lets you save on heating and cooling costs when you're asleep or away. Also called the setback (heating) or setup (cooling) temperature.

Period key

One of the four keys—WAKE, LEAVE, RETURN or SLEEP—that you press to check or program the start time and temperature for a time period.

Preprogrammed schedule

This is the schedule programmed into your thermostat at the factory. It sets a night program that provides energy savings if you don't set your own program, or if your personal program is lost for any reason. The program, which is the same for all

days of the week, is:

Period	Start Time	Temperature	
		Heating	Cooling
WAKE	6:00 AM	70°F	78°F
LEAVE	-----	No program-----	-----
RETURN	-----	No program-----	-----
SLEEP	10:00 PM	60°F	78°F

Program

The times and temperatures you set to define the comfort and energy savings periods for each schedule (weekdays, Saturday, Sunday).

Recovery

The time when the thermostat operates the heating or cooling equipment to return the house from the energy savings to the comfort temperature. The thermostat starts the recovery period early so the house will be at the comfort setting by the time you've chosen.

Saturday program schedule

The schedule of WAKE, LEAVE, RETURN and SLEEP period start

times and temperatures that you program to run on Saturdays.

Setback

Reducing the temperature in the house for a set period every day in winter for energy savings. The lower temperature is the energy savings temperature.

Setup

Raising the temperature in the house for a set period every day in summer for energy savings. The higher temperature is the energy savings temperature.

Set point

The temperature you set on the thermostat. The thermostat turns the heating or cooling equipment on and off to maintain this temperature at the thermostat location until another temperature setting goes into effect.

Status Lights—Lights that show system operating mode.

ENRG SAV light (green)—This light glows during the LEAVE and SLEEP periods (located on thermostat).

SYSTEM light (yellow)—This light glows whenever the thermostat is calling for heating or cooling (located on thermostat).

AUX HT light (green)—This light glows whenever the thermostat is calling for operation of the backup heater. Backup (auxiliary) heat is more expensive to operate than the heat pump and typically is used only when the heat pump is unable to handle the load (located on subbase).

CHECK light (yellow)—Consult your heat pump equipment literature to determine whether this light is used and its meaning (located on subbase).

EM HT or SUPL. HT light (red)—This light glows whenever the

thermostat system switch is in the EM HT or SUPL HT position (located on subbase). On some systems it may also indicate the need to switch to EM. HEAT or SUPL HT because of a problem with the heat pump.

Sunday program schedule

The schedule of WAKE, LEAVE, RETURN and SLEEP period start times and temperatures that you program to run on Sundays.

Time period

One of four program periods: WAKE, LEAVE, RETURN and SLEEP available with the thermostat. One period begins when the previous period ends.

WAKE—The time period when you want the house at a comfortable temperature while the family gets up and gets ready to leave for work or school. This is the only period that must contain a time and temperature.

LEAVE—The time period when

you can set back (winter) or up (summer) the temperature for energy savings because the family is usually away from home.

RETURN—The time period when you want the house at a comfortable temperature for family activities in the evening before bedtime.

SLEEP—The time period when you can set back (winter) or up (summer) the temperature for energy savings because the family is sleeping. Set it to start at your family's normal bedtime. Often the SLEEP program is set only for the heating season so family members can sleep cool in summer.

Weekday program schedule

The schedule of WAKE, LEAVE, RETURN and SLEEP period start times and temperatures that you program to run Monday through Friday.

YOUR PERSONAL PROGRAM

You can use the tables below to plan your schedule before you begin programming. If you choose not to program a daytime energy savings period, leave the LEAVE and RETURN periods blank.

Weekday Program

PERIOD	START TIME	HEATING TEMPERATURE	COOLING TEMPERATURE
WAKE	_____	_____	_____
LEAVE	_____	_____	_____
RETURN	_____	_____	_____
SLEEP	_____	_____	_____

Saturday Program

PERIOD	START TIME	HEATING TEMPERATURE	COOLING TEMPERATURE
WAKE	_____	_____	_____
LEAVE	_____	_____	_____
RETURN	_____	_____	_____
SLEEP	_____	_____	_____

31

Sunday Program

PERIOD	START TIME	HEATING TEMPERATURE	COOLING TEMPERATURE
WAKE	_____	_____	_____
LEAVE	_____	_____	_____
RETURN	_____	_____	_____
SLEEP	_____	_____	_____

TROUBLESHOOTING GUIDE

IF...

Display will not come on.

Display flashes during programming.

Display flashes during operation.

Program is lost due to power outage.

Temperature change occurs at the wrong times.

Heating will not come on.

THEN...

- Check that heat or cool system power is on. If you use batteries, replace with fresh ones.
- Make sure thermostat is correctly mounted on subbase.
- You have reached the temperature setting limit. The setting range is 45°F to 88°F. In models with automatic heat-cool changeover, the COOL temperature setting must be at least 3°F above the HEAT temperature setting.
- Programming has been lost because of a power outage. You must reprogram.
- Check that backup batteries are installed correctly. Replace if necessary. Reprogram the thermostat.
- Check the program times for the period in question. Be sure that AM and PM indications are correct. Make sure the current day and time are correct. Reprogram if necessary.
- Remember that the heating system or cooling system comes on *before* the WAKE and RETURN start times so the house will be at the desired temperature when the period starts.
- Check the fuse or circuit breaker and replace or reset if necessary.
- Check that switch on thermostat is set to HEAT or AUTO.

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Heating will not come on. (con't)

Cooling will not come on.

The building is too warm or too cool.

Display says HEAT ON or system light is on, but no heat is coming from the registers.

Display flashes REPL BAT or goes blank when power is turned off.

- Heat pump thermostats have a built-in time delay which may add to time delays in the heating equipment. Allow up to 10 minutes after changing the setting before the compressor starts.
- If temperature setting is higher than current temperature, and display says HEAT ON or SYSTEM light is on, contact your heating and air conditioning contractor.
- Check the fuse or circuit breaker and replace or reset if necessary.
- Check that switch on thermostat is set to COOL or AUTO.
- The thermostat has a built-in time delay, which may add to time delays in the cooling equipment. Allow up to 10 minutes after changing the setting before the compressor starts.
- If temperature setting is lower than current temperature, and display says COOL ON or SYSTEM light is on, contact your heating and air conditioning contractor.
- Press PRESENT SETTING to check the current temperature setting.
- If desired, change the time or temperature setting. See page 19.
- Allow time for the heating equipment to heat up before checking for heat at the register.
- Install fresh AAA alkaline batteries (See page 27).

QUICK REFERENCE TO THE KEYS

Press these keys to:



Begin the current day or time programming.



Set the day of the week and select the program day during programming.



Select the time period to program or review.



Switch between heat and cool modes during programming or when reviewing the program.



Set the time ahead and back. Hold either key down to change the setting faster.

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Set the temperature while programming and temporarily change the temperature during operation. Hold either key down to change the setting faster.



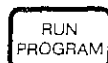
Hold any temperature you desire for an extended period.



Change the temperature to the set point of the previous period.



Maintain the current temperature through the next program period.



Start your programmed schedule, cancel temporary program changes.



See the current temperature setting. Setting may not match programmed setting during recovery from energy savings.

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*See the product features inside the front cover.

